THE ZOOLOGIST

No. 819.—September, 1909.

NOTES ON THE ORNITHOLOGY OF OXFORDSHIRE, 1908.

By O. V. Aplin, F.L.S.

January 1st. — Weather severe. Large flocks of Wood-Pigeons.

3rd.—Bullfinch feeding on berries of privet.

6th.—Sudden change to mild weather.

8th.—Great Tit with spring note.

9th.—Big floods.

10th.—Weather severe again. Good many Bramblings under beech avenue, but not many adult males.

12th.—Down to 13°.

13th.—14°. Hedge-Sparrow singing.

15th.—Mild and very damp.

17th.—*Galanthus elwesi*, *Cyclamen coum*, and *Chimonanthes* in flower.

18th.—Green Woodpecker's laugh now very full and ringing, a leisurely "hark, hark, hark, hark" (or "yark"). In summer, just after the breeding season, and late summer, its notes are shorter "hik, hik, hik," more rapidly uttered, or sometimes a short "hick-el"; hence its local name.

24th.—Thick and persistent fog the last three days. It prevails over a great part of Europe.

27th.—Song-Thrush singing, but not many birds here.

About an inch and a half of rain this month.

February 8th. — No Fieldfares and Redwings to be seen. Some Bramblings. Thrush song very fine now.

14th.—Chaffinch, Yellow Bunting, and many Larks singing. Saw one Fieldfare.

20th.—Thousands of Wood-Pigeons reported feeding on seed-grass and clover-fields about South Newington hills. Saw a Siskin in cypress in Banbury, where several have been seen for some days.

21st.—Blackbird singing. Great increase of Chaffinches in the last week.

28th.—Snowstorm and frost.

29th.—Sharp frost. A great many Bullfinches in the garden, six in one plum-tree. Some Bramblings in the garden; frequent stackyards this weather.

A very dry month.

March 1st.—Heavy snowstorm.

5th.—Notwithstanding wintry weather the Rooks have a lot of nests built.

6th.—Violent storm and deluge of rain.

7th.—A Thrush's nest in garden finished externally.

8th.—Mistle-Thrush sings finely now in the daytime, but I do not notice it in the evening, when the Song-Thrush is at its best.

13th. — Song-Thrush laid one egg. Found in yew-hedge Blackbird's nest with four eggs partly incubated. Some Fieldfares about again.

15th.—Some snow. Apricot blossom.

23rd.—The first spring-like day. Peewits in the ploughings.

26th.—Big floods.

31st.—Although I went over a great deal of ploughed land about Wroxton when out with the Basset hounds, I could see no Wheatears.

A rough, cold month, with much high wind and over 3½ in. of rain or snow.

April 3rd.—Chiffchaff in song.

4th.—Young Robins hatched.

17th.—Swallow. Male Lesser Redpoll about some alders above Upper Grove Mill. A late spring.

19th.—Some snow.

BRITISH MUSEUM

20th.—Heavy snow showers.

22nd.—Mistle-Thrush's nest with four hard-sat eggs in a laburnum-tree in the garden; the bird sits very hard, but her tail extending over the edge of the nest and the light-coloured outer tail-feathers make her conspicuous.

23rd.—Snow fell all day (up to noon mixed with rain), but fortunately wasted to some extent; temp. 37° at noon. At 5.30 p.m. every twig loaded with snow and shrubs weighed down. A Thrush sitting high on big young in a bay-tree sat bravely through it, though the weighing outwards of the branches has quite exposed her; wind N.N.E. By 7 p.m. it was freezing, and the wind having risen the conditions approached those of a blizzard for a time, but the wind sank to calm again. A Blackbird sang in evening.

24th.—At 4.30 a.m., with everything deep in snow and the temperature having been down to 26° in the night, Blackbirds sang well. Bright sun thawing snow in forenoon, but the air was cold, and icicles from one to two feet long formed on the eaves, &c. Most of the snow wasted during the day, but some remaining on the roofs, hills, and the church-spire (a sure sign) looked ominous, and the air soon cooled again, until by 6.30 p.m. it was freezing; then snow began to fall at night, the wind having backed from N.N.W. to S.W. The Mistle-Thrush and the Song-Thrush in the bay-tree sat out the storm so far.

25th.—Snowed all last night, but the snow had wasted to same extent as it fell, so that it was not very deep this morning; still falling. But about 11 a.m. the wind went into the east and then north, the temperature dropped, and the snow accumulated. Snow fell all day, and by evening everything was buried. At 11 p.m. snow was still falling. Heard Fieldfares flying over in the day. Blackbirds sang at intervals in the morning, but not in the afternoon, and Thrushes not at all. The Cuckoo was reported as seen and heard at Stanton Harcourt!

26th.—A wonderful scene this morning in the sun. Snow a foot deep on the level—*e. g.* my lawn—and several feet deep in the drifts. It was nearly a foot deep on the roofs and heaped up on shrubs (which were in many cases bowed to the ground), and trees to the same extent. Great destruction among shrubs and trees, which were broken or fallen in all directions. The sun was strong, and the temperature rose to 50°, so the snow melted fast during the day; much, however, still remained. The Cuckoo was heard at Watlington and at Tadmarton this morning, and a male Blackcap appeared in the garden in the afternoon. Every nest that I knew of in the garden was deserted, and the young, if hatched, perished, and numbers of Rooks seem to have lost their broods. But, strange to say, a Pheasant, which had a nest under some thorns lying against a mangold-bury in one of our fields, sat right through the double storm covered up with snow except for a small blow-hole, and finally hatched off and brought up her brood. The storm was one of the heaviest we have had since 1881, and possibly had not a great deal of the snow melted as it fell it would have been the deepest fall of modern years; it certainly was the deepest spring fall ever known. Some remote villages were isolated on the 25th, and the snow was seventeen or eighteen inches deep on the level in some parts of Oxfordshire.

27th.—A steady thaw, and a great deal of rain at night.

28th.—Still some heaps of snow remaining; a great rain and the lower part of the village heavily flooded. The Thames Valley flooded. A Swan's nest on island near Caversham Bridge carried away.

29th.—The warmest day this year—56° in shade. Cuckoo noisy; a pair of Swallows here, singing; Willow-Wren in song; but it is probable that a great many migrants have perished.

30th.—A lot more rain last night and until noon to-day. Great floods in the valleys, and upland fields with standing pools of water. Lots of Swallows about the village.

Rain (and snow) on about eighteen days this month amounted to nearly four inches. Wind chiefly in the north-west.

May 1st.—An extraordinary change to a summer day; 70° in the shade. Whitethroats, Ray's Wagtail, and Tree-Pipit had arrived, and Swallows and Cuckoos are numerous.

2nd.—Up to 72°, and blossom coming out rapidly in the hot air, and everything seems in a hurry to make up lost time; a Thrush had a nest externally finished in the forenoon of the 29th. Two Garden Warblers here to-day. Kestrel had four eggs.

3rd.—Lots of House-Martins. A clutch of Carrion-Crow's eggs brought in to-day consisted of two very hard-sat and one addled egg. Six Magpie's eggs were fresh.

7th.—Several Swifts. Two Nightingales reported from Bloxham Grove. A clutch of Crow's eggs consisted of three very hard-sat and two addled ones.

9th.—Spotted Flycatcher. Some of the summer migrants I have missed seeing altogether this season. Jackdaw's clutch was two half-incubated and one addled eggs. These addled eggs are due to the snow, I suppose.

10th.—Turtle-Dove.

12th.—Shot some young Rooks; some few could fly. This is the average day for shooting them, so it is evident that plenty of young Rooks survived the snowstorms, although it is difficult to understand how the old ones got any food. As usual at this rookery, some of the young birds showed more or less white about their beaks and claws. Redstart (scarce this year) and Lesser Whitethroat first noticed, although a nest of the latter had three eggs the next day.

15th.—Away from home until June 4th. A male Nightjar was sent to me from Banbury on May 25th.

June 4th.—Mistle-Thrush singing.

9th.—A Turtle-Dove's nest in a hedge had a distinct lining, worked so that it held together, of thick herbaceous plant-stems. There is a great variety in these nests. In the longest evenings, when they are bright, Song-Thrushes stop singing in this garden at 9.10 p.m. Blackbirds stop a good deal earlier. In the hilly grass-fields at the back of the garden, which catch the light longer, the Thrushes sing a little later.

19th.—A pair of Shrikes at the old place near the railway station.

23rd.—Report that there were three Crested Grebes and a nest with one egg on the water at Eynsham Hall on April 24th.

30th.—Examined a clutch of eight Sparrow-Hawk's eggs taken at Chadlington on May 5th. Saw a Hobby on the wing near Churchill.

June a cold, rather dry month, with much N.E. wind. A little over two inches of rain fell on seven days, over an inch of which fell in one day.

July 1st.—A curiously light night, with a glow in the north; not dark all night.

5th.—Great Tit with fledged young in one of my boxes. Does this bird rear two broods?

19th.—Blackbird singing.

26th.—Thrush singing early.

About 2¼ in. of rain on ten days this month. The 30th was the hottest day so far, and only 75°.

August 4th.—Starlings (with Blackbirds), having swept the garden of bush-fruit, do not visit the garden much now. They ate all the black currants this year for the first time. Blackbirds are now eating plums on the wall-trees.

11th.—Country very dry now.

14th.—Gulls passing over at night. Two were seen over this garden yesterday evening, and a flock of Wild Geese were reported flying over the village a few days ago.

15th.—Martins have gathered on the house-roof for nearly a week in increased numbers daily.

16th.—Plenty of Swifts, although they are not very numerous this year.

17th.—About half a dozen seen.

18th.—None.

20th.—Five weeks since the last useful rain.

September 5th.—Goldfinch singing. A diminution in numbers of Swallows and Martins.

11th.—Began shooting; harvest late.

12th.—Great congregation of Martins on roof lately and till to-day, but none noticed next day.

14th.—Flock of two hundred or three hundred Peewits on ploughing at Barford. No migratory Pipits yet. A good season for Hares.

15th.—A Blackbird sang a little. We have seen no Land-Rails this season, but shooting began late.

22nd.—News of Quail shot at Signet Hill on 17th.

23rd.—Some Pipits in roots for first time, scattered about everywhere, but nowhere in any numbers.

24th.—A few Martins on roof.

25th.—The greater part of the Martins and of Swallows have gone. Blackbirds have nearly all left the garden now, the fruit (except apples) being gathered. Thrushes always leave earlier, and do little damage.

27th.—A Blackbird sang a little.

29th.—Lark singing.

30th.—No Swallows or Martins to be seen. Fine hot weather.

Less than an inch of rain this month, though it fell on nearly half the days of the month.

October 7th.—A pair of Martins. Bullfinches have been scarce this summer; none bred here this year.

12th.—Very fine warm season. Some Pipits in roots; seem to be on the move. Great many Song-Thrushes in roots and hedges, where they feed on elder-berries. I was standing at the end of a spinney (chiefly larch) on South Newington Hill, which the beaters were bringing along, when a Long-eared Owl flew out low down, with its beautiful long wings held straight out almost like a Shearwater's. Seeing me close by, it wheeled round and settled in a partly bare elder-bush. As it flew past me its "ears" were hardly noticeable, but directly it alighted it put them up. When staying at Rainworth with Mr. Whitaker early in the month I learned the hoot of this bird. It is a single cry; a rather long-drawn melancholy "who." They probably breed in the spinneys about South Newington Hill and Great Tew, but we have none about Bloxham.

13th.—Wren sang. Few migratory Pipits this year.

17th.—Blackbird sang a few notes. Fair lot of Pipits. The flocks of Mistle-Thrushes have gone. A friend of mine saw a Magpie carry a stick across a field and go to a nest in a tree at Milcomb. Very fine warm season. The song of the Wren is quite a feature of this autumn.

18th.—A great many Song-Thrushes and Blackbirds now about the hedges.

22nd.—A Woodcock at the gamedealer's.

29th.—A Brimstone Butterfly.

30th.—Song-Thrush singing, a poor song.

31st.—Small party of Redwings. Greenfinches now feed on cotoneaster-berries; eight in a bush by the dining-room window at one time.

A fine warm month; rain only amounted to about ·90 in.; but very heavy mists and dews.

November 2nd.—Corn-Bunting singing. Very warm.

3rd.—One Fieldfare. Bramblings heard. Hedges blind and trees hardly changed at all yet.

5th.—Flock of about one hundred Fieldfares, and others about. The notes of the Brambling to be heard all round.

6th.—In an osier-bed at South Newington we got a Jack-Snipe, while a wasp's nest was in full blast in the hedge-bank. A curious mixture of seasons. In the high thorn-hedge four Moorhens were perching quite twelve feet up. There were no haws for them to be feeding on.

8th.—First white frost; weather summer-like up to now.

10th.—Severe white frost; down to 17°.

11th.—Mild again.

16th.—Song-Thrush singing.

17th.—Lots of buttercups flowering in grass-fields.

18th.—A Grey Wagtail on my lawn; a most unusual visitor to a walled-in garden, though often seen in the village brook not far away. I saw it frequently afterwards down to the 26th feeding about on the lawn and borders; a delightful visitor, but not welcomed by one of the garden Robins, which attacked it once. Wren sings well this month.

26th.—Pied Wagtail singing.

27th.—A few Redwings about, but no Fieldfares.

28th.—Corn-Bunting singing. Lots of daisies in flower.

29th.—Song-Thrushes are now in full voice, and sing well most of the day, but chiefly in morning. Little song until after the middle of the month.

A fine, warm, but damp month. Rain on more than half the days, but only a little over an inch altogether. Wind south-west.

December 2nd.—A few Fieldfares about again, single birds.

12th.—Nuthatch at Wroxton. One here this autumn.

14th.—Hedge-Sparrow sings now.

18th.—Mistle-Thrush singing. Fairly mild weather so far, but morning frosts.

21st.—Winter aconite blooming. *Climonanthes* next day.

26th.—Colder weather. Big flocks of packed Larks. Many Bramblings among the mixed flocks of Finches, and a flock of about one hundred by themselves, chiefly, if not all, old males.

27th.—Snowed all day, and froze at night. Thrushes are silent, but Hedge-Sparrow still sings.

28th.—Hard frost until end of year, when thaw set in.

29th.—Snowed all day.

30th.—Maximum temp. 14°. Fieldfares flying over.

Mr. Fowler reported in the summer that a pair of Little Owls were established at Kingham, but this little bird, which is spreading all over the country, and is now common in Northamptonshire, has not yet reached this neighbourhood. I knew it and its curious notes well at one time.

Rain or snow fell on more than half the days of the month, but amounted to less than two inches. A remarkably damp, mild autumn.

THE GEOGRAPHICAL DISTRIBUTION OF THE LAND-BIRDS OF THE BANDA ISLANDS.

By J. R. McClymont.

(Continued from vol. xi. p. 351.)

Sylphitreron wallacei, G. R. Gray (Wallace's Pileated Fruit Pigeon).

Ptilonopus wallacii, G. R. Gray, P. Z. S., 1858, pp. 185, 195, pl. cxxxvi.

Sylphitreron wallacei, Sharpe, 'Hand-List, Genera and Species of Birds,' vol. i. p. 59 (1899).

Aru Islands, Ké Islands, Timor Laut, Babar, Great Banda.

This Fruit Pigeon was first obtained in the Aru Islands in 1857 by Dr. Wallace, and was recorded as inhabiting Babar by Dr. A. B. Meyer in 1884.* A male was obtained on Great Banda by the late Mr. H. Kühn on Oct. 17th, 1898. "Iris red orange, feet crimson-lake, bill sulphurous."

Eurystomus australis, Swains. (Australian Roller).

Eurystomus orientalis, Vig. & Horsf., Trans. Linn. Soc. xv. p. 202 (1826).

E. australis, Swains., An. in Menag. p. 326 (1827).

Celebes, Sula Islands, Buru, Amboyna, Great Banda, Ceram, Matabello Islands, Lombok, Lesser Sunda Islands, Timor, Flores, Aru Islands, Timor Laut, Ternate, Gilolo, New Guinea, North-east, East, and South-east Australia, Lord Howe Island, New Zealand.

One specimen (the sex of which is not stated) was obtained by Mr. Kühn on Great Banda in September, 1898. The egg is white and glossy, and average specimens measure from 1·31 in. to 1·38 in. in length, and from 1·05 in. to 1·13 in. in breadth.

Food.—Insects.

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* 'Ueber neue und ungenügend bekannte Vögel, Nester und Eier aus dem ostindischen Archipel,' p. 50.

For the knowledge that this species or subspecies, and also all the species and subspecies which follow it, are Bandanese, I am indebted to a paper entitled "The Birds of the Banda Islands," by Dr. Hartert, published in 'Novitates Zoologicæ,' vol. vii. pp. 551–554. Where permissible I have, in accordance with the usual practice in 'The Zoologist," preferred binomial to trinomial nomenclature.

CUCULUS INTERMEDIUS, Vahl. (Oriental Cuckoo).

Cuculus intermedius, Vahl., Skriv. af Natuur, Selsk. iv. p. 58 (1797).

Eastern Siberia, Japan, China, Formosa, India, Assam, Pegu, Andaman Islands, Nicobar Islands, Burma, Sumatra, Java, Celebes, Great Banda, Batchian, Morty, Flores, Timor, Dama* (Banda Islands), New Guinea, North and North-east Australia, New Britain, Pelew Islands, Luzon, Mindanao, Palawan.

Food.—Insects and fruit. The egg is known and has been described.†

EUDYNAMIS CYANOCEPHALA subsp. EVERETTI, Hart.

Eudynamis cyanocephala everetti, Hart., Nov. Zool. vii. p. 231.

Buru, Great Banda, Ké Islands, Timor, Alor, Sumba, ? New Guinea.

A small form of *E. cyanocephala* (the Koel), the food of which consists of insects and fruit.

ASTUR POLIONOTUS, Salvad. (Hoary-backed Goshawk).

Astur polionotus, Salvadori, Mem. Accad. Torino, xl. p. 19 (1889).

Timor Laut, Dama (Banda Sea), Great Banda.

MEGAPODIUS DUPERREYI, Less. & Garn. (Scrub Fowl).

Megapodius duperreyii, Less. & Garn., Bull. Sci. Nat. viii. p. 113 (1826).

Kangeang Archipelago, Lombok, Flores, Sumba, Romah, Wetter, Dama, Toukang, Besi Islands, Great Banda, Ké Islands, Aru Islands, Salawatti, New Guinea, North, North-east, and North-west Australia, Prince of Wales Island, Booby Islands, Cairncross Island, Scawfell Island (Great Barrier Reef).

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* I follow Herr Riedel's mode of writing this name.

† Campbell, 'Nests and Eggs of Australian Birds,' p. 563.

This Megapode has been already recorded from the Banda Islands.* In Australia its food consists of insects, fruit, &c. (*Broadbent*); in the stomach of an example from Dobbo were fruits only (*C. Ribbe*). The egg varies in colour from reddish brown to pale buff or dull cream colour, and the long diameter of eggs of average size is 3·2 in. to 4·0 in., and the short diameter 2·05 in. to 2·2 in.†

OCHTHODROMUS GEOFFROYI, Wagl. (Greater Sand-Plover).

Charadrius geoffroyi, Wagler, Syst. Av. Charadrius, p. 61, No. 19 (1827).

South-eastern Europe, Africa to southern extremity, Madagascar, Rodriguez, Palestine, Syria, Arabia, Central Asia, India, Ceylon, Tenasserim, Cochin China, China, Japan, Formosa, Hainan, Andaman Islands, Nicobar Islands, Malay Peninsula, Sumatra, Java, Borneo, Flores, Solor, Babar Letti, Moloe, Buru, Amboyna, Banda Islands, Ceram, Batchian, Gilolo, Mysol, New Guinea, Negros, Panay, Leyte, Bohol, Palawan, Pelew Islands, Ualan, North-west, North, and North-east Australia.

The food of the Greater Sand-Plover consists of spawn, small insects, &c. (*Dresser*).

OCHTHODROMUS MONGOLUS, Pall. (Lesser Sand-Plover).

Charadrius mongolus, Pall., Reis. Russ. Reichs, iii. App. p. 700 (1776).

Eastern Asia (Kamchatka, Dauria, Mongolia, Corea, Japan, China, Hainan), Kurile Islands, Philippine Islands (Bohol), Celebes, Banda Islands, Gilolo, Morty, Aru Islands, Ruk, Admiralty Islands, Duke of York Island, Troughton Island, North and North-east Australia. Accidental on Choris Peninsula, Alaska.

Troughton Island is off the north-west coast of Australia. The Lesser Sand-Plover breeds in Eastern Siberia and on the Commander Islands, and in Ladakh. Ridgway describes the eggs as "pale dull olive, varying to buffy olive, rather sparsely and irregularly speckled with dark brown and black."‡ They measure about 1·43 in. by 1·05 in.

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* 'Schlegel, Mus. Pays-Bas,' viii. p. 57 (1880).

† 'B. M. Cat. Birds' Eggs,' i. p. 17.

‡ Ridgway, 'Manual N. A. Birds,' p. 179 (1887).

NUMENIUS VARIEGATUS, Salvad. (Eastern Whimbrel).

Tantalus variegatus, Scopoli, Del. Flor. et Faun. Insubr. ii. p. 92 (1786).

Numenius variegatus, Salvadori, Orn. Pap. iii. 332 (1882).

Eastern Siberia, Burma, Tenasserim, Selangore, Singapore, Japan, Corea, South China, Formosa, Negros, Cebu, Luzon, Sula Islands, Borneo, Celebes, Sangir, Sido, Tukang-Besi Islands, Buru, Great Banda, Ceram, Tenimber Islands, Flores, Babar, Dama, Aru Islands, Ké Doulan, Gilolo, New Guinea, Mysol, Morty, Jobi, Admiralty Islands, Duke of York Island, New Britain, Pelew Islands, Matalotas Island, Uap, Lukunor, Ruk, Ponapé, Ualan, New Caledonia, Vanua, Levu, Australia, Lord Howe Island, Tasmania, New Zealand.

TOTANUS STAGNATILIS, Bechst. (Marsh Greenshank).

Totanus stagnatilis, Bechstein, Orn. Taschenb. ii. p. 292 (1803).

Northern, Central, and Southern Europe (accidental in Heligoland), Africa (south to Orange River), Asia Minor, Arabia, South Persia, North-west, North-east, and South India, Ceylon, Burma, Pegu, Tenasserim, Turkestan, Siberia, Dauria, Manchuria, Japan, China, Formosa, Malay Archipelago (Java, Great Banda), East and South-east Australia.

The egg has been described in several ornithological works.*

HETERACTITIS BREVIPES, Vieill. (Grey-rumped Sandpiper).

Totanus brevipes, Vieillot, Nouv. Dict. d'Hist. Nat. vi. p. 410 (1816).

Heteractitis brevipes, Stejn., Orn. Expl. Kamt. 137 (1885).

Eastern Siberia, Japan, China, Formosa, Liu-Kiu Islands, Cebu, Negros, Leyte, Bohol, Mindanao, Ladrone Islands (*G. R. Gray*), Borneo, Celebes, Tukang-Besi Islands, Banda Islands, Dama, Moloe, Batchian, New Guinea, Admiralty Islands, Duke of York Island, West Island (Torres Straits), Wednesday Island, North-east Australia.

TRINGOIDES HYPOLEUCUS, L. (Common Sandpiper).

Tringa hypoleucus, Linn., Syst. Nat. i. p. 250 (1766).

Europe (occurs in Corsica), Africa to southern extremity,

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* Dresser, 'Manual of Palæarctic Birds,' p. 788.

Madagascar, Mauritius, Socotra, Arabia, Palestine, Persia, Beloochistan, India, Ceylon, Kamchatka, Commander Islands, Mongolia, Manchuria, Corea, Japan, Tsushima, China, Formosa, Hainan, Luzon, Camiguin, Negros, Cebu, Bohol, Pelew Islands, Ladrone Islands, Lukunor, Assam, Andaman Islands, Nicobar Islands, Burma, Pegu, Siam, Malay Peninsula, Singapore, Sumatra, Java, Great Cocos Island, Celebes, Siao, Sangir, Tukang-Besi Islands, Buru, Amboyna, Banda Islands, Floris, Timor, Babar, Luang, Letti, Kisser, Aru Islands, Ké Doulan, Batchian, Morty, Mysol, Waigiou, New Guinea, Admiralty Islands, New Ireland, Duke of York Island, Australia, Tasmania.

The food of the Common Sandpiper consists of insects, Crustacea, &c. (*Gilbert*). A bird from Dobbo had small crabs in the stomach (*C. Ribbe*).* There is a description of its egg in Dresser's 'Manual of Palæarctic Birds,' p. 792. It nests in Northern and Central Europe and in Northern Asia.

TEREKIA CINEREA, Güld. (Terek Sandpiper).

Scolopax cinerea, Güldenst., Nov. Comm. Petrop. xix. p. 473, tab. 19 (1774).

Russia (accidental in Finland), Germany, Italy, Africa, Mauritius, India, Ceylon, Andaman Islands, Selangore, China, Siberia, Japan, Palawan, Negros, Bohol, Sumatra, Java, Celebes, Ceram, Great Banda, New Guinea, Australia.

The name of this bird is derived from the Terek, near the mouth of which, on the western shore of the Caspian Sea, it nests. It also nests in the valleys of the Volga and Ural, and north of the Dvina. The egg is described in Dresser's 'Manual of Palæarctic Birds,' p. 795. The food consists of worms, insects, &c. (*Dresser*).

GLOTTIS NEBULARIUS, Gunner. (Greenshank).

Scolopax nebularius, Gunner. Leem. Lapp. Beschr. p. 251 (1767).

Europe, Africa to southern extremity, Socotra, Arabia, India, Laccadive Islands, Ceylon, Cochin China, Siberia, Manchuria,

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* A. B. Meyer in 'Zeitschrift für die gesammte Ornithologie,' 1884, p. 295.

Corea, Japan, China, Luzon, Burma, Pegu, Assam, Tenasserim, Malacca, Sumatra, Java, Borneo, Celebes, Great Banda, Goram, Babar, Dama, Aru Islands, Ké Islands, Ternate, Gilolo, Australia, Tasmania, New Zealand (*Buller*), accidental in eastern North America (Florida), ? (*Ridgway*).

The Greenshank feeds on mollusca, crustacea, &c. It nests in Northern Europe and Siberia; a description of the egg is in Dresser's 'Manual of Palæarctic Birds,' p. 786.

LIMONITES RUFICOLLIS, Pall. (Eastern Little Stint).

Trynga ruficollis, Pall. Reis. Russ. Reichs, iii. p. 700 (1776).

North-eastern Siberia, Dauria, Bering Island, Commander Islands, Kurile Islands, Mongolia, Japan, Corea, China, Palawan, Negros, Bohol, Pelew Islands, Burma, Pegu, Tenasserim, Andaman Islands, Nicobar Islands, Selangore, Malacca, Singapore, Java, Borneo, Celebes, Sangir, Amboyna, Great Banda, Ceram, Gilolo, Morty, New Guinea, Aru Islands, Salawatti, Australia (occurs on Troughton Island and Rottnest Island), Tasmania, New Zealand (*Buller*).

The food of the Eastern Little Stint consists of marine insects and small mollusca.

ANCYLOCHILUS SUBARQUATUS, Güld. (Curlew-Sandpiper).

Scolopax subarquata, Güldenst., Nov. Comm. Petrop. xix. p. 471, tab. xviii. (1774).

Europe (occurs in Corsica), Greenland, occasional in eastern North America and in Alaska (*Ridgway*), Africa, Teneriffe, Madagascar, Rodriguez, Cyprus, Arabia, India, Ceylon, Diego Garcia, Siberia, China, Hainan, Burma, Andaman Islands, Pegu, Tenasserim, Selangore, Malacca, Singapore, Java, Great Banda, New Guinea, Australia (occurs on Houtman's Abrolhos and Rottnest Island), Tasmania, New Zealand (*Buller*).

The Curlew-Sandpiper nests in Northern Siberia and within the Arctic Circle in Greenland. The egg is described as pale greyish or greenish buffy spotted with deep brown, and with purplish-grey markings. The length is from 1·47 in. to 1·40 in., and the breadth from 1·02 in. to 1·0 in.

MOTACILLA MELANOPE, Pall. (Grey Wagtail).

Motacilla boarula, Linn., Mant. p. 527 (1771).

M. melanope, Pall., Reis. Russ. Reichs, iii. App. p. 696 (1776).

Europe (occurs in the Azores), Madeira, Egypt, Asia Minor, Arabia, Palestine, Persia, India, Ceylon, Assam, Tenasserim, Pegu, Siam, Penang, Malacca, Java, Borneo, Tukang-Besi Islands, Buru, Amboyna, Great Banda, Moa, Dama, Morty, China, Japan, Cebu.

The food of the Grey Wagtail consists chiefly of aquatic insects and larvæ. The egg is described in Dresser's 'Manual of Palæarctic Birds,' p. 203.

[*Pitta vigorsi* has been obtained on Dammer or Dama in the Banda Sea (Nov. Zool. vii. p. 18). That it has occurred on Dammer or Dama is doubtful. *Edoliosoma dispar* and *Chalcophaps chrysochlora* were obtained by M. Kühn at the Banda Islands (Nov. Zool. vii. pp. 552, 553).]

DESCRIPTION OF *FILARIA MAVIS*, N. SP., FROM THE THRUSH.

By Robert T. Leiper, M.B., F.Z.S.,
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The blood of birds, both in this country and in the Tropics, often swarms with minute larval nematodes. The parental forms that give rise to these young are seldom obtained without a very detailed examination of all the tissues of the host. Thus it happens that while the characters of the embryo are frequently quite well known, those of the adults escape investigation.

Several observers have reported a high percentage of Blackbirds and Thrushes in Great Britain to be heavily infected with microfilaria, but none describe systematically the mature worms.

A short time ago I examined a couple of Thrushes in Inverness-shire; both showed numerous sheathless microfilariæ in the blood. The adults were discovered, in a bursa in close association with the ankle-joint, when the skin of the leg was reflected over the metatarsus. The only other round worm found in these birds was a solitary *Spiroptera turdi* in the walls of the stomach. There were several filaria in each bursa. They had the appearance of short lengths of softened catgut, and were of two sizes, the males being only half as long as the female worms.

Description of the Male Worm.

Total length 6 mm., greatest diameter 0·2 mm. This thickness is maintained uniformly over the middle 2 mm. of the body; from that region the worm tapers anteriorly to 0·16 mm. at the commencement of the chyle intestine, and abruptly to 0·05 mm. at the level of the nerve-ring within 0·1 mm. of the anterior end of the body. Posteriorly also the worm tapers gradually to 0·16 mm. at 1 mm. from the tip of the tail, which is bluntly pointed, the last 1 mm. being coiled to resemble a "note of interrogation." The skin is smooth and without spines in any region. The mouth is simple, there is no oral vestibule, and if there be any circumoral papillæ they are too minute to observe. The œsophagus is a delicate tube of uniform thickness ·01 mm., measuring 0·65 mm. in length. Its wall shows faint transverse striæ due to muscular fibres. At 0·1 mm. from the mouth the œsophagus is crossed by the nerve-ring. The chyle intestine, with a thickness almost double that of the œsophagus, passes along the remaining length of the body to open at the anus 0·05 mm. from the tip of the tail.

The testicular tube shows many changes in diameter in its long wavy course from anal aperture to its free blind end at 0·45 mm. from the anterior extremity of the body. Passing forwards from the cloaca it gradually dilates to attain a width of 0·1 mm. at 0·85 mm. therefrom. Suddenly constricting to 0·03 mm., it proceeds forwards as a narrow tube for 0·4 mm. A sharp kink occurs, and the tube soon widens to 0·05 mm. This diameter is maintained for 3 mm. along a slightly tortuous course. The tube now almost imperceptibly narrows to 0·02 mm., and remains of this thickness until within 0·45 mm. of the mouth, where the testis then curves upon itself to end in a small round knob.

The spicules are two in number, and of almost equal size and shape. They are short and thick, with bent tips, and measure 0·09 mm. The genital papillæ were represented by small cuticular knobs not at all easy to determine. One pair of such papillæ immediately in front of the anus and a second pair almost at the tip of the tail were seen. Immediately behind the anus there were indications of a third pair, but their existence is doubtful.

DESCRIPTION OF THE FEMALE WORM.

Total length about 12 mm., greatest breadth 0·3 mm., both ends are bluntly pointed, the anterior tapering more gradually than the posterior. The truncate anterior extremity measures 0·05 mm. in diameter; this increases at the nerve-ring to 0·1 mm., and at the vaginal opening, 0·4 mm. from the mouth, to 0·15 mm. At 0·9 mm. the body has a breadth of 0·2 mm., and then slowly increases until the middle of the body, where the maximum diameter of 0·3 mm. is attained. For 3 mm.—*i. e.* to the level of the junction of uterus with ovary—this thickness remains unchanged, but thereafter it decreases; at 1 mm. from the tail it is 0·26 mm., at 0·5 mm. 0·22 mm., rapidly dwindling to 0·06 mm. at the anus.

The vulva opens at 0·4 mm. from the mouth. The vagina is exceedingly short, only 0·05 mm., and divides almost at once into two uteri that pass backwards for about 0·5 mm. Each tube then twists upon itself and proceeds with increasing diameter to attain a thickness of 0·1 mm. at about 2 mm. behind the mouth. The two uteri pass backwards side by side and in close contact for a distance of 4 mm. Thereafter they diverge slightly, the chyle intestine occupying the intervening space, but continue their course to within 3·5 mm. of the posterior end of the body, when they abruptly terminate, within half a millimetre of each other, in fine ovarian tubules that occupy the succeeding millimetre with their numerous coils. The remaining two and a half millimetres of the body is traversed by the chyle intestine alone.

The alimentary canal closely resembles that of the male, the œsophagus is crossed by the nerve-ring at 0·13 mm., and terminates in the chyle intestine at 0·75 mm. from the mouth. The anus opens at 0·1 mm. from the posterior extremity.

NOMENCLATURE.

The adult filaria that have been found hitherto in members of the genus *Turdus* and in allied forms have been provisionally identified as *Filaria abbreviata*, Rud., apparently without investigation of their minute structure.

The specimens described in this paper cannot belong to this species, for there are characteristically present in *Filaria abbreviata* deciduous spines on the cuticle, an infundibuliform pharynx armed with teeth, and the spicules are dissimilar both in size and design.

Filaria turdi, v. Linstow, is apparently the same, or a closely allied species of *Spiroptera* as occurred beneath the mucosa of the stomach in one of our birds. *Filaria turdi olivascentis*, Molin, and *Filaria turdi atrogularis*, v. Linstow, are unacceptable names according to modern rules of nomenclature, although the latter species appears from its too brief description to approach somewhat closely to the parasite now described. Under these circumstances it is obvious that our *Filaria* of *Turdus musicus* must be recorded as a nomenclaturally new species, *Filaria mavis*, mihi.

ON THE HYMENOPTEROUS PARASITES OF RHYNCHOTA.

By Claude Morley, F.E.S., F.Z.S.

(Continued from p. 314.)

73. *Melanoxanthus salicis*, Linn.

McLachlan found this species to be annually abundantly attacked by *Aphidius gregarius*, Marsh.; he says, "I saw a mass of many thousands, each of which I believe to have been stung," on a willow-twig, at Kentish Town, in September (quoted by Buckton, ii. 23); Marshall raised the same species from this host in Devonshire, where also its hyperparasite, *Lygocerus carpenteri*, has been bred. On the Continent its place appears to be taken by *Aphidius proteus*, Wesm., and *A. obsoletus*, Wesm., both of which Brischke bred in Prussia (Schr. Nat. Ges. Danz. 1882, p. 182). Haliday says of his exclusively British *Trioxys letifer*, "Prodiit mihi ex Aphidibus Salicis ulmi-foliæ, Junio mense," and Gaulle (Cat. 87) records *T. heraclei*, Hal., from *Aphis salicis*. *Praon abjectum*, Hal., is said by Giraud (Ann. Soc. Fr. 1877, p. 415) to have been bred from an aphis on *Salix*, and from others similarly designated Gaulle (Cat. 27) mentions *Allotria victrix*, Westw., and *A. tricolor*, Kief., which may be nothing but Cameron's *Phæoglyphis salicis*, raised by the latter from black Aphids concealed in galls of the Nematid, *Cryptocampus medularius*, Htg. (= *Euura pentandræ*, Thoms. et Cam.) on *Salix pentandræ* in Clydesdale. Perhaps *Lygocerus castaneus*, Kief., is hyperparasitic on this Aphid (*cf.* Gaulle, Cat. 113).

74. *Siphocoryne pastinaceæ*, Linn.

Curtis says (Farm. Ins. 74) that the Cabbage Aphis is preyed upon by "the *Trionyx rapæ* and *Cynips fulviceps*, and the same or a closely allied species infests the carrot aphides at an earlier period." Possibly Kieffer's new *Allotria brevicornis*, said to have been bred from an Aphid on *Bupleurum* (the present species occurs on the allied *Apium graveolens*), is synonymous with the latter, as may also be said of *A. mullensis*, Cam., bred from Aphids on *B. falcatum* (Gaulle, Cat. 26). *Aphidius dauci*, Marsh., has been bred from the present species by Bignell and Marshall in Devonshire on Sept. 30th, 1886, and July 10th, 1888 (Marsh. Br. d'Europ. ii. 602), and it is perhaps the larva of this direct parasite, which Buckton figures (Mon. Aph. ii. pl. xliii.), lying subcutaneously in a curved position within the abdomen of an apterous female of *S. pastinaceæ*. *Aphidius exiguus*, Hal., *Allotria minuta*, Htg, *A. pusillima*, Gir, *Encyrtus atheas*, Walk., and *Agonioneurus daucicola*, Först. (? MS.), were raised by Giraud (Ann. Soc. Fr. 1877, pp. 415–6) from Aphids, most probably of this species, on *Eryngium campestre* and *Conium maculatum*. *Allotria perpusilla*, Kief., is recorded from an Aphid on *Conium*.

75. *Siphocoryne xylostei*, Schr.

Aphidius avenæ, Hal., and *A. loniceræ*, Marsh., were both bred from this too common species in Devon by Bignell, who also raised the former's hyperparasite, *Allotria cursor*; but *A. loniceræ* would appear to be rare, since but eight females and two males were obtained on July 16th, 1884. Bignell also there raised *Praon longicorne*, Marsh. (Trans. Devon. Ass. 1901, p. 688). *Lygocerus carpenteri*, Curt., is also somewhat vaguely given as attacking this species by Gaulle and Dalla Torre.

76. *Siphocoryne fœniculi*, Pass.

In Devonshire, Marshall bred six specimens of his *Aphidius brassicæ*, comprising both sexes, and Bignell a single male on July 2nd, 1884, from this species; and Cameron (Phyt. Hym. iii. 233) records *Allotria circumscripta* from Aphids on fennel.

77. *Siphocoryne capreæ*, Fabr.

The only direct record we have from this species is that of Bignell (Trans. Devon. Ass. 1901, p. 688 et Br. d'Europ. ii. 594), who bred *Aphidius cardui*, Marsh., very commonly in Devonshire. Possibly some of the species under *Melanoxanthus* (*supra*) and the genus *Aphis* (*infra*) belong here; but none are sufficiently explicit.

78. Aphis.†

A good many parasites have at various times been bred from members of this genus—sometimes, doubtless, *sensu lato*—which have not been recognized, and often with no record even of their food-plant. From an *Aphis* on *Lapsana communis*, upon which at least five Aphids are known to live, Marshall bred "a fine set" of *Aphidius crepidis*, Hal. (Br. d'Europ. ii. 582). From an *Aphis* on *Galium verum* Bignell bred two *A. cirsii*, Hal.; from an *Aphis* on a foreign shrub he also bred nine male and female *Aphidius hortensis*, Marsh.; and from an *Aphis* feeding on several species of willow he bred, in July and August, *Aphidius salicis*, Hal., of which the latter tells us (Ent. Mag. 1835, p. 102) the majority are destroyed by the hyperparasitic *Allotria fulviceps* and another species of the same genus. From Aphides on *Pyrethrum parthenium*, *Engelmannia pinnatifida*, and *Echinops bannaticus*, Giraud bred *Aphidius exiguus*, Hal. (Ann. Soc. Fr. 1877, p. 415), and adds (*l. c.* 419, 421) that the Chalcids, *Agonioneurus flavicrus*, Gir., and *Encyrtus atheas*, Walk., also emerged from the Aphids on the last-named plant. *Misaphidus* (= ? *Praon*) *crudelis*, Rondani, has been bred by him from *Aphis* sp. in Italy. Buckton gives no Aphids at all as feeding on any *Plantagineæ*, but Kirchner says (Cat. 31) of *Allotria heterocerus*, Htg., "Später aus *Aphis plantaginis*." From "*Aphis* on *Chrysanthemum*, *Populus*, and *Salix*" has been bred *Allotria pusilla*, Kief.; from "*Aphis* on *Ægopodium*, *Alisma*, and *Platanus*" has been bred *Allotria recticornis*, Kief., according to Gaulle (Cat.); and from *Aphis* on *Carthamus tinctorius*, Giraud records (Ann. Soc. Fr. 1877, pp. 415, 421) *Allotria flavicornis* Htg., and *Encyrtus atheas*, Walk. This last Chalcid is also given by Giraud as preying upon an *Aphis* on *Scorzonera*, and, together with another, *Agonioneurus daucicola*, Först. (? MS.), upon an *Aphis* on *Silaus aurifolius* (*l. c.* 419–421). *Chrysolampus æneicornis* and *Tridynus rosulorum* are recorded from *Aphis* spp. by Ratzeburg, and his *Lygocerus antennalis*, *L. aphidivorus*, *L. campestris*, and *L. Giraudi* by Kieffer. Giraud bred *Isocrates vulgaris*, Walk. (Ann. Soc. Fr. 1877, p. 427) from *Aphis* on *Gypsophilus* and *Pinus*, and *Cerocephala cornigera*, Westw. (*l. c.* 422) from "Aphides diverses."

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† Many Fossores are known to provision their nests with *Aphididæ*:—*Psenulus pallidipes* preys upon species of both *Aphis*, as mentioned by Curtis, who saw the former storing them in straws of thatch, and nymphs of *Psylla*, as given by Giraud (Ann. Soc. Fr. 1877, p. 470); *Pemphredon unicolor*, as indicated by Curtis, Shuckard (Trans. Ent. Soc. 1836, p. 57), and Giraud (Verh. z.-b. Ges. 1863), and *P. lugubris*, as noted by Latreille, Kennedy (Philosoph. Mag. 1838, p. 17), and Shuckard (Foss. Hym. 197), prey upon *Hyalopterus pruni* and various species of the genus *Aphis*; the last also stores up *Melanoxanthus salicis*; *Stigmus pendulus* preys upon *Myzus cerasi*, another unspecified species of *Aphis*, and I have seen it in Ipswich carrying off *Aphis hieracii* from the stems of *Heracleum sphondylium* on July 28th and 29th, 1901. Gaulle says the species of *Diodontus* are "parasites de Pucerons," and Curtis found them storing living Aphids in their nests in straws of thatch. *Passalæcus gracilis* and *P. corniger* gather species of *Aphis*, and the latter was captured among them on currant-bushes in Battersea Fields by Shuckard (Foss. Hym. 192). *Nitela spinolæ* attacks *Aphis picridis* and another species of the same genus, and *Crabro aphidum* and *C. panzeri* allied species. Buckton considers it probable that Fossors paralyse their Aphid prey by stinging them before carrying them off, but this is not the case, since I have seen *Diodontus tristis* seize and fly off with *Siphonophora millefolii* without bringing its sting near it (*cf.* Entom. 1908, p. 210). Suspended animation may, however, be produced by stinging after reaching the nest. Each kind of Fossor is thought by Buckton to store a single species of Aphid. Giraud (Ann. Soc. Fr. 1866, pp. 443-500) states that the genus *Celia* appears to confine the food of its progeny to Coccids, while *Pemphredon*, *Cemonus*, *Diodontus*, *Passalæcus*, and *Stigmus* prey upon Aphids.

The intercourse of Ants with Aphids is, I believe invariably, of a friendly nature, and in no way enters the subject of this paper; the latest note on the subject (Ent. Rec. 1908, p. 281) is very typical.

79. *Aphis brassicæ*, Linn.

Curtis tells us (Farm. Ins. 74) that during the end of July and beginning of August, 1848, scarcely a female of this species out of the swarms under his cabbage-leaves escaped the attacks of his *Trionyx* (*Aphidius*) *rapæ* and his *Cynips fulviceps*; he adds that Jurine figures another species, *C. erythrocephalus*, with the same habits. Buckton (Mon. Aph. ii. 35) says that often nine-tenths of a colony of this aphis is destroyed by *Trionyx rapæ*—which he bred from it and professes to sketch (*l. c.* ii. pl. xlvi. fig. 7)—and that others are attacked by species of *Ceraphron* and *Coruna*. *T. rapæ*, which is referred to the genus *Aphidius* by Curtis (MacIntosh's 'Book of the Garden,' ii. 194), is synonymised by Marshall with his own *Aphidius brassicæ*, several of which were bred by Bignell in Devon from this host on Aug. 4th, 1885; and by Marshall from probably the same Aphid on *Raphanus maritimus* (Br. d'Eur. ii. 598), from which also he raised a single female of his *Aphidius matricariæ* (*l. c.* 592). Gaulle adds that *A. medicaginis*, Marsh., has been bred from an *Aphis* on *Raphanus*, and Giraud (Ann. Soc. Fr. 1877, pp. 415 et 434) bred *Megaspilus aphidum*, Gir., and *Allotria circumscripta*, Htg., from Aphids on the same genus of plants. *Allotriæ* are not very satisfactorily bred from this species, which we must suppose to have been that on *Sinapis*, from which Kieffer records *A. victrix*, Westw., and his own new *A. curvata* and *foveigera*, as well as that upon *Barbarea*, from which he records *A. pusilla*, Kief.; *Aphis chenopodii*, Schr., from which Kirchner (Cat. 31) says he raised *Allotria testacea*, Htg., is probably synonymous. From America we only have the new descriptions of *Encyrtus aphidiphagus* and *Pachyneuron aphidivora*, Ash. (Bull. Ent. U. S. Dept. Agric. 1887, p. 14); and the record of *Aphelinus mali*, Hald. (Howard, Revis. Aphel. N. Amer. 24), as bred from the Cabbage Aphis.†

80. *Aphis cratægaria*, Walk.

From this species in South Devon, Bignell has bred the very common direct parasite, *Aphidius avenæ*, Hal., together with its hyperparasite, *Allotria cursor* (Marsh. Br. d'Europ. ii. 574).

81. *Aphis mali*, Fabr.

The only mention of this species I find is in Gaulle's Catalogue, where it is said (p. 86) that *Ephedrus plagiator*, Nees (= *parcicornis*, Nees) preys upon it.

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† I believe no *Ichneumonidæ* to be truly parasitic upon Rhynchota. The only records of which I am aware are in the case of (1) *Aphis brassicæ*, from which Cresson says (Trans. Amer. Ent. Soc. 1872, p. 173) that Webster bred the former's Ophionid *Limnerium rivalis*, as well as (Proc. Ent. Soc. Philad. 1864, p. 259) his *L.* (*Mesoleptus*) *tibiator*, which preys, according to Riley, upon Lepidoptera; and (2) *Tolype vellida*, from which Dalla Torre (Cat. iii. 563) erroneously says Wesmael bred the still ambiguous *Ichneumon bellus*, Grav. (*cf.* Morl. Ichn. Brit. ii. 4). Members of the Tryphonid genus *Bassus* are frequently seen among Aphids, but they are certainly invariably in search of aphidiphagous Syrphid larvæ, upon which they oviposit (*cf.* Westw. Introd. ii. 140, fig. 1 et Entom. 1908, p. 234). Many *Ichneumonidæ* are, however, attracted by the honeydew exuded by Aphids (*cf.* Morl. Ichn. Brit. ii. 344 et iii. 321).

82. *Aphis urticaria*, Kalt

A new species of *Allotria*, *A. urticarum*, is described by Kieffer (André, Spp. Hym. Eur.) from this *Aphis*.

83. *Aphis pyraria*, Pass.

Bignell tells us (Trans. Devon. Ass. 1901, p. 689) that he has bred *Monoctonus caricis*, Hal., from this species in South Devonshire, on June 10th, 1884.

84. *Aphis scabiosæ*, Kalt.

All that is known of the parasites of this species is contained in the second volume of Marshall's Bracon. d'Europe. He describes (p. 597) a new species, *Aphidius scabiosæ*, twenty-nine individuals of which were bred by Bignell in Devon from this host in the middle of June, 1884. *Aphidius avenæ* (p. 574) and *A. ervi*, with the latter's hyperparasite, *Isocrates æneus*, Nees (p. 576), were also bred by Bignell in Devon commonly. Rondani is said (p. 615) to have bred in Italy his *Misaphidus* (= ? *Praon*) *aphidiperdus* from *Aphis chloris*, Koch, probably synonymous with the present species, on *Hypericum perforatum*.

85. *Aphis tanacetina*, Walk.

Three individuals of *Aphidius cirsii*, Hal., were bred in July, and three females of *A. chrisanthemi*, Marsh., were bred on the remarkably early date of Jan. 9th, 1884, in Devonshire by Bignell (Trans. Devon. Ass. 1901, p. 690).

86. *Aphis pruni*, De G.

Praon volucre, Hal., with its hyperparasites, *Allotria ullrichi*, Gir., and *Isocrates vulgaris*, Walk., have been bred hence by Bignell in Devon, and Gaulle (Cat. 87) mentions *Aphidius rosæ*, Hal., from it. *Aphidius proteus*, Wesm., with *Allotria victrix*, Westw., are brought forward by Brischke (Schr. Nat. Ges. Danz. 1882, pp. 124 et 182), "aus der Schlehenblattlaus erzogen"; and Buckton says (Mon. Aph. ii. 150 et errata) that Guérin's "black *Cynips* with a red head and rufous legs," probably *Allotria victrix*, . . . "is parasitic on one of the plum *Aphides*." From an "*Aphis* on *Prunus*," Giraud (Ann. Soc. Fr. 1877, p. 415), gives *Alloxysta erythrothorax*, Htg., and Kirchner (Cat. 31) says of the same parasite, "Aus der Schwarzen Pflaumenblattlaus."

87. *Aphis hieracii*, Kalt.

In Devonshire, Bignell has bred *Praon abjectum*, Hal., but Haliday himself (Ent. Mag. 1833, p. 491) says of his *Trioxys heraclei*, which alone he bred from the Aphids of *Heracleum sphondylium*, "Habitat in Aphidibus Heraclei Sphondylii florentis Julio mense vulgatissimus, posthâc vix obvius." It is surprising more parasites have not been bred from so ubiquitous a host.

88. *Aphis epilobii*, Kat.

Praon abjectum, Hal., has also been bred in Devon by Bignell from this species on Sept. 24th, 1883 (Trans. Devon. Ass. 1901, p. 688), and Gaulle (Cat. 26) tells us that *Allotria brevitarsis*, Thoms., also preys on an *Aphis* sur *Epilobium*.

89. *Aphis euonymi*, Fabr.

I have been unable to clear up the mystery attaching to Dalla Torre's record of *Miscogaster nitidus*, Walk., from "Britannia" only, and yet bred by Rondani from this host; it is certainly not mentioned thence by Walker (Ent. Mag. 1833, p. 459 et Mon. Chal. 280).

90. *Aphis lychnidis*, Linn.

Bignell bred *Aphidius lychnidis*, Marsh., from this species on April 29th, 1883, in Devonshire (Marsh. Bracon. d'Europ. ii. 607).

91. *Aphis ilicis*, Kalt.

Probably this was the "*Aphis* on holly" from which Bignell (Trans. Devon. Ass. 1901, p. 690) raised *Aphidius matricariæ*, Marsh., on June 19th, in Devonshire; it is not recorded as British, though thought by Buckton and Walker to be probably synonymous with our abundant *Aphis hederæ*, from which no parasites are recorded.

92. *Aphis jacobææ*, Schr.

Marshall tells us (Bracon. d'Europ. ii. 594) that *Aphidius cardui* has been commonly bred from *Aphis jabcobæ* in England.

93. *Aphis rumicis*, Linn.

This polyphagous Homopteron has been noticed to be somewhat extensively preyed upon by Hymenoptera, and it would be of great economic importance if some permanent natural enemy could be established. So far from that, we at present have but four direct parasites, two of which must be considered doubtfully ascribed to this host, and two secondary (and consequently injurious) parasites. Marshall bred both sexes of his *Aphidius fabarum* from it in England (Bracon. d'Europ. ii. 600); Gaulle (Cat. 87) gives *Trioxys heraclei*, Hal., as preying upon it. It can hardly be considered proved that Haliday's *T. angelicæ* destroys it, since he says simply, "Hab. inter Aphidis Angelicæ sylvestris autumno parum frequens" (Ent. Mag. 1833, p. 490); and his *Praon abjectum* is no more reliable with "Hab. inter Aphides Angelicæ sylvestris autumno passim" (*l. c.* 485). I simply place these here because the common *Aphis* of *Angelica*—a plant not mentioned by Buckton—seems to me hardly distinct from *A. rumicis*. However that may be, I consider it comparatively certain that some species of *Praon* attacks *A. rumicis*, since Buckton states (Mon. Aph. ii. 155) that he has bred *Coryna clavata* from "its silken tent" beneath the dried larval skin of this species; it is extremely improbable that this Chalcid constructs a cocoon of its own, and *Praon* is the only genus of direct parasites known to do so outside the host's body. Buckton further gives a capital account (*l. c.* 85, pl. lxiv.) of his Chalcid, *Pachycrepis* (*Coryna*) *dubia*, which he (probably erroneously) considered a direct parasite, and he states that it is sometimes destroyed by a much smaller parasite—(?) of the third degree—several of which find sustenance in the former's body and pupate within the external cocoon, which is said (*l. c.* 156) to resemble a tilting casque, beneath the body of the either winged or apterous aphis.

94. *Aphis atriplicis*, Linn.

I have found this species abundantly upon *Aster tripolium* in the salt-marshes at Southwold, in Suffolk. Haliday records his still exclusively British *Aphidius asteris* (Ent. Mag. 1835, p. 101), "Habitat in Aphidibus Asteris Tripolii copiose." Gaulle says (Cat. 106) that the Chalcid, *Aphelinus tibialis*, Nees, has been bred from the probably synonymous *Aphis chenopodii*.

(To be continued.)

NOTES AND QUERIES.

MAMMALIA.

Mammals of the Isle of Wight: a Correction.—In Mr. Morey's 'Guide to the Natural History of the Isle of Wight,' recently reviewed in 'The Zoologist,' I am responsible for the mammals, &c., in the list. Since the book was published Mr. R. Lydekker has written to me to say that he made a mistake in identifying a cetacean as the White-sided Dolphin (p. 539), which he now finds is a Porpoise.—Percy Wadham (Newport, Isle of Wight).

AVES.

The Unfortunate Swifts.—In a previous short note (*ante*, p. 196), I called attention to the early appearance of those summer-loving birds in this part of Hampshire, but I fear the cold of June and July was very adverse to their well-being and general increase. Only once —about the beginning of June—did I hear their excited screams, or see their sweeping flight near the eaves of the old thatched cottages where they usually nest, or hear their peculiar evening song as they joyously gambol high in air, as if bidding the sun a last good-night. On the contrary, more than one evening they were observed hanging in clusters from several buildings, as is sometimes their wont, in cold weather, and I do not recollect any previous occasion when I have seen or heard of so many Swifts being found dead, and most, if not all, in a starved condition; one morning a friend of mine picked up fourteen birds beneath the church-tower. By the end of July all seem to have disappeared, except a few stragglers from more northern localities on their way south. Was a similar mortality observed in other localities, as the distribution of heat and cold seems to have been very uncertain even within the compass of our own comparatively small island?—G. B. Corbin (Ringwood, Hants).

The Common Buzzard in East Sussex. — A Common Buzzard (*Buteo vulgaris*) was shot in the Battle neighbourhood, in Sussex, on June 8th; the bird was not, however, recovered till the 26th, when it was in too bad a condition for the purpose of preservation. The wing however, was sent to me for identification. I cannot help feeling sorry that it has met with an untimely end, as the deep woods at Ashburnham and around Battle seem as if they might be a resting place for this now fast-vanishing species.—THOMAS PARKIN.

Note on an Eagle in North Wales.—On July 2nd I had the unusual pleasure of seeing an Eagle on the hills near Harlech, North Wales. As it came sailing along a ridge some three-quarters of a mile off, I at first took it for a Buzzard (not an uncommon bird thereabouts); while watching it, however, one of the latter species appeared following, and made a stoop at it. The Buzzard then came on quite near me, and soared to an immense height, finally disappearing, while the Eagle kept along the ridge, and was still too far off to be identified for certain. Soon after I heard a tremendous croaking, and saw a pair of Ravens attacking it; I then observed it was about twice the size (across wings) of its assailants, and its wing-flap and note were quite unlike a Buzzard's. (I regret I could get no idea as to which species it was, unless the note, sounded like "kyu," very shrill and sharply uttered, can identify it. I did not notice any white about it, but the bird was too far off to be sure of this.) The Ravens never ceased stooping at it, even when settled, until they had driven it off some half-mile along the ridge, when they returned with redoubled croaks to the spot where I suppose they had carrion, for the Eagle at once turned and followed them back. They drove it off in this way no fewer than six times, and its immediately following them back seemed most remarkable; it never retaliated, only once or twice turning up on one side in the air as if in defence. Sometimes when it settled only one Raven stayed on guard, as it were, but as soon as it rose again both went for it. All three birds kept up an incessant noise. I was watching them more than half an hour, when, on trying to get nearer, the Ravens disappeared; the Eagle settled near by, but on my moving again it also made off.—H. G. ATLEE (Wimbledon).

Early Appearances of Sea-Birds in and round London.—On July 31st I saw a Cormorant fly over the road between Hampton and Sunbury; it passed over at no great height (probably from the reservoirs). A few minutes after it again appeared, and flew round for some minutes, finally going off to the northward. On Aug. 1st a Black-headed Gull paid a short visit to Penn Ponds, Richmond Park, and on the 6th I saw four at Kew. On the 10th there was a party of at least twenty Blackheads on the river between Vauxhall and Lambeth Bridges, and on the 10th I saw at the same spot a Lesser Black-backed and a Herring-Gull flying up the river together (the former seems rare in London in mature plumage; at least I never could see one during all the hard weather last winter).—H. G. ATLEE (Wimbledon).

Cormorant in Warwickshire.—I wonder if it is possible for Mr. O. V. Aplin to re-examine the Cormorant sent to him for identification, and which was killed on Sept. 8th, 1908.* From the length (32 in.) and weight (3½ lb.), I am somewhat certain the bird was not a Common Cormorant (*P. carbo*), but a Green Cormorant (*P. graculus*). My reasons for this conclusion are that the average weight of adult Green Cormorants varies between 3 lb. 8 oz. and 5 lb. 2 oz., the weights of immature Green Cormorants from 3 lb. 3 oz. to 4 lb. 10 oz. The average length of both adults and immatures seems to be from 28 in. to 30 in. In the Common Cormorant the weights run from 8 lb. to 9 lb., and average length from 38 in. to 40 in. The above weights and measurements are taken from a series of both species in my collection, all of which were weighed and measured by me. The wing-measurement in the example under notice would go far towards a satisfactory identification.—F. SMALLEY.

The Bean Goose on the Solway. — We are sorry we were not able to reply earlier to Mr. H. W. Robinson's remarks (*ante*, p. 270) on the records of Bean Geese and the note mentioning the nesting of Wigeon at Bassenthwaite in April, 1908, as recorded in the Natural History Bureau of the Carlisle Museum, for we were from home during the intervening time. When we state in these records that a species has been seen we are quite sure that the person making the record is perfectly competent to identify the species, and that there is no doubt as to the correct identification. Our opening note in the records for 1908 points out that we do not accept such notes unless we know that the person sending them is competent to identify the species recorded. Mr. Nichol is not only a wildfowler of thirty years' experience, but is a keen and observant ornithologist whose knowledge of the birds of the Solway is unequalled by anyone in the district, and whose word was never questioned by such an eminent ornithologist as the late H. A. Macpherson. We quite agree that it is difficult for an inexperienced person to distinguish between the calls of the various kinds of Geese, but Mr. Nichol's life-long and daily intercourse with the wild life of the Solway enables him to identify immediately any of the birds which ordinarily visit the firth, and even our own more limited experience would not allow us to confound the call of the Grey Lag with that of either the Bean or Pink-foot. Of course we are speaking of birds at a reasonable distance; Geese flying in "skein" or "gaggle" at a distance of half a mile or upwards could scarcely be determined, and would not be noted unless the occurrence was exceptional. The Pink-foot, Bean, and Grey Lag Geese are all common in season on the Solway marshes, and although the Pink-foot is undoubtedly the commonest of the three, it does not appear to frequent the lower marshes as much as the Bean, and on the upper marshes the combined numbers of Bean and Grey Lag run it pretty close. During the last two winters the game and poultry shops of Carlisle contained quite as many of the two latter species as of *brachyrhyncus*, a good criterion of the comparative rarity or otherwise of wildfowl. Perhaps we on the Solway have better opportunities of observing the various species of Geese than is afforded to Mr. Robinson, and it may surprise him to hear that at times the Wild Geese on one particular marsh can only be estimated in thousands, and it is possible frequently to hear the calls of the three species mentioned at one time, and with the aid of a glass to distinctly make out the different species. There is never the least difficulty with the Grey Lag in flock, as the blue shoulder of the adult is most conspicuous, and the longer beak and generally darker coloration of the Bean is almost quite as unmistakable to the experienced observer; moreover, it is probably as easy for Mr. Nichol to identify these species at a distance of from two to four hundred yards as it is for some people to do in the hand, even if they know certain characteristics. We are quite sure that when Mr. Nichol says Bean Geese, he has been able to distinctly identify them as "Bean" and not "Pink-foot," and Mr. Robinson may be assured that they were that species. We need not reply to the query as to correct identification of Grey Lag on Dec. 7th: the date is not exceptional.

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* *Cf. ante*, p. 315.

With regard to Mr. Robinson's further letter respecting the breeding of Wigeon at Bassenthwaite in April, 1908, we hardly see the point of his criticism. Has it escaped him that this is another note by Mr. W. J. Farrer, and is neither the first or second record to this Bureau of such occurrence, but simply a record of the fact that a Wigeon was nesting there at that time? Mr. Farrer clearly established his identification as correct in the first instance in 1903, as Mr. Robinson's quotation shows: "I found the female bird sitting on ten eggs"; his later records therefore cannot be doubted. The particulars of a pinioned Wigeon breeding in North Lancashire may be interesting, but has no bearing upon the Bassenthwaite case. Several pairs of Wigeon breed on an estate in North Cumberland, but they were introduced, though now in a feral state. Neither is there any parallel between the Bassenthwaite case and the case of mistaken identification of Shoveler's eggs at Belfast. It may in some instances be difficult to distinguish between the eggs of various ducks; there is of course more or less variation in the eggs of all birds, but it is again largely a matter of experience, and Shoveler's eggs are usually distinct from those of Wigeon, without the evidence of down or feathers. The Shoveler breeds regularly in the Solway district.—Linnæus E. Hope & D. Losh Thorpe, The Museum, Carlisle.

Birdsnesting in August.—It is three years ago since I sent my last notes under this heading to 'The Zoologist.' This year I was again in the same village in Cambridgeshire for the August Bank Holiday. On Saturday, July 31st, I walked from the station to the village through a narrow belt of trees alongside the road. Here I found a nest of Spotted Flycatcher with half-fledged young on a dead fir-bough close up to the trunk. A little further on was a nest of Song-Thrush in the hedgerow with nearly fledged young. Next I came across a Wren's nest about four feet from the ground in a bush beside a pine tree, and, feeling something soft moving inside, I opened up the hole, and found it to contain a litter of young Shrews, apparently the common species (*Sorex vulgaris*). There were four or five of them, more than half-grown. I believe the Shrews generally build on or under the ground—at all events, this is the first family I have ever found in a bird's nest. Then a Wood-Pigeon went from its nest in a beech tree, and a few yards further on I found a Turtle-Dove sitting on two eggs. Alongside the road I found a Linnet with three fresh eggs in a hawthorn bush. On Aug. 1st I followed a dyke or drain for about a mile and a half through the cornfields. Put a Common Bunting (*E. miliaria*) from its nest of four nearly fresh eggs amongst the long grass on the edge of the dyke. In the hawthorn bushes along its course put a Wood-Pigeon off a newly-made empty nest, and found another sitting on two eggs. Both these nests were very substantial structures, fully six inches in depth, and looking more like Crows' than Pigeons' nests. Saw a party of young Hedge-Sparrows and another of young Whitethroats fluttering amongst the thick herbage, having evidently only just left their nests. Found a Linnet with two fresh eggs, a Turtle-Dove with two deserted eggs, each having a hole pecked in it, and another nest of the same species with two fresh eggs. The heavy rain at midday put a stop to any further search that day. On Aug. 2nd I examined some pollard-willows, and found three nests of Tree-Sparrow, each with five eggs, one set fresh another partly incubated, and the third with the young hatching. Several nests of House-Sparrow in a stall alongside contained fresh eggs and young birds respectively, and in the hedgerow adjoining was a Song-Thrush with young. On a straw-stack in an adjacent field, I was told, a French Partridge had nested, but its nest had been disturbed a fortnight previously when some of the straw had been taken away for thatching the hayricks. I counted sixteen eggs scattered about under the stack in a half-rotten condition in various stages of incubation. Along the roadside I found the Linnet's nest which had three eggs on Saturday now contained five, and found two more nests with five eggs and one egg respectively, all fresh; also a Yellowhammer with two and another with four eggs. By the side of a ditch I found a Common Whitethroat with three eggs apparently hard-sat, and not many yards away was a young Cuckoo almost fully fledged in the nest of a Hedge-Sparrow. This is the latest date at which I have ever found a young Cuckoo in the nest, although I have found a new-laid egg of the Cuckoo in a Whitethroat's nest in the first week in July. On the morning of Aug. 3rd I found two nests of Turtle-Dove with one and two fresh eggs respectively, a nest of Hedge-Sparrow with four eggs all sucked, whilst a few yards further on was another new nest with one fresh egg, two nests of Linnet with four and two eggs respectively, and four nests of Yellowhammer with one, four, two, and three eggs respectively. In the afternoon I returned to town.—ROBERT H. READ (Bedford Park, W.).

A Correction.—In the note appended to the record of the White Chaffinch (*ante*, p. 315) the word "eggs" was unfortunately omitted. It should read: "Mr. Dresser, in his 'Man. Pal. Birds,' says of the *eggs* of this bird, 'occasional varieties,' &c."—ED.

REPTILIA.

The Smooth Snake (Coluber lævis).—It is interesting to know that this somewhat local reptile is still found in the Forest, and upon the heath-lands on the opposite side of the Avon, where it was first established as a British species. The localities where I formerly found it are being gradually built over, but during the summer a gentleman, wishing to secure one of the snakes for a friend, asked me if I could tell him where to find it. Having searched near its old haunts he succeeded in capturing three specimens, one a very fine female measuring fully twenty-five inches in length, and of a very dark colour, but having the characteristic dark "crown" and black line running from the gape. Contrary to its general habit, this specimen appeared to be very lethargic, but undoubtedly it was near changing its skin, as the "scales" had already grown over its eyes—(one person who saw it suggested blindness)—but when placed in a box with the other two it fought and bit furiously at the smaller one, which was, I suppose, of the same sex. These two, sixteen and eighteen inches in length respectively, were very prettily marked, and appeared iridescent, especially about the head, when the sun shone upon them. After retaining them two or three days the person for whom they were secured declined to have them, because of the difficulty of keeping and providing food, so they were taken back to their native heath and there liberated. My limited experience points to the fact that the species in question prefers dry and sunny situations, and is seldom found in damp places such as the common *natrix* delights to inhabit; this latter I have often seen in the water, but *lævis* never, and I think it is often supposed to be an Adder, and is killed in consequence.—G. B. Corbin (Ringwood, Hants).

AMPHIBIA.

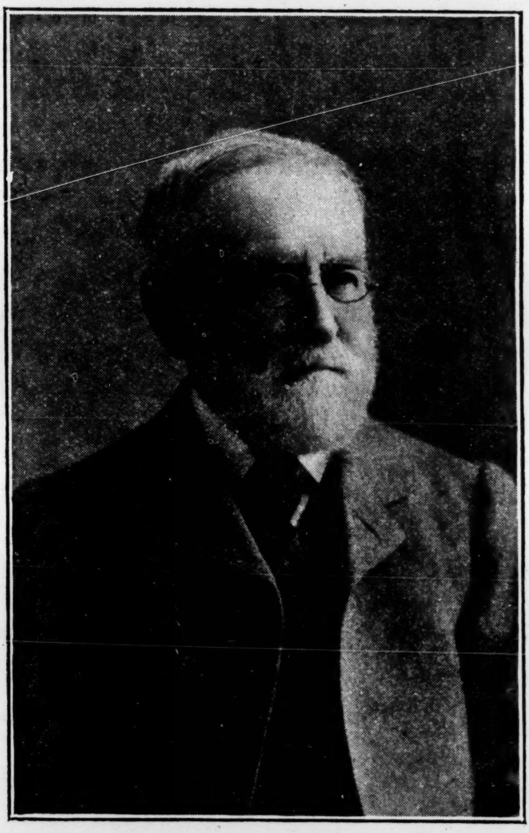
Palmated Newt (Molge palmata) in Hertfordshire.—On June 27th I took several examples of this Newt from a pond in Ashridge Park. The species does not seem to have been recorded hitherto for Hertfordshire.—Charles Oldham (Watford).

OBITUARY.

Thomas Southwell.

By the death of Mr. Southwell 'The Zoologist' has lost one of its oldest contributors and Norfolk one of its best naturalists. He passed away on Sunday, Sept. 5th, at his residence, 10, The Crescent, Norwich, in his seventy-ninth year, having rallied from an alarming breakdown in January of last year, about which time he wrote to us saying his work was done, a statement we rightly refused to accept, and he subsequently acquired a considerable amount of bodily and mental vigour.

According to the 'Eastern Daily Press,' in a notice evidently written by a competent authority, "Mr. Southwell was a native of King's Lynn, and the greater part of his days he had spent as a member of the clerical staff of Gurney's Bank, afterwards Barclays', which he had served at Lynn, Fakenham, and, chiefly, at Norwich. A voracious reader and a born naturalist, he used his leisure hours to such good effect that by the time he had reached middle life his reputation as an ornithologist was already considerable. He edited the third volume of Stevenson's 'Birds of Norfolk,' compiling it from matter which Stevenson had himself left, and adding to it copious notes. He brought out also a new edition of Lubbock's 'Fauna of Norfolk,' to which he made various additions. His work on 'Seals and Whales of the British Seas' is everywhere recognized as an able and authoritative treatment of a somewhat neglected subject. It would be too long a task to follow Mr. Southwell in all his literary enterprises. Suffice it to say that he wrote with skill and freedom, and touched a great variety of natural history subjects. Perhaps the best of his more fragmentary work was done in connection with the Norfolk and Norwich Naturalists' Society, whose secretary he was for several years, and whose president he was in 1894. The work by



which he is most popularly known is perhaps his 'Guide to the Castle Museum' (Jarrolds). He was a member of the Zoological Society and the British Ornithologists' Union. He served on the Castle Museum Committee and the Norfolk and Norwich Library Committee. He actively interested himself in the formation of the new Museum Association at Norwich, and he was one of the leading spirits of the Science Gossip Club. Mr. Southwell leaves two daughters. His wife predeceased him about five years ago."

Mr. Southwell appears to have first contributed to the pages of 'The Zoologist' in 1869, when he described a nesting of the Little Grebe, and since that time very few volumes indeed of our Journal have appeared without some interesting and valuable communication from his pen, and also for a very considerable number of years his annual reports on the northern "Seal and Whale Fishery" which possess an importance in zoological literature which subsequently will reach a fuller estimation. He was a naturalist of the old school, now, alas! represented by sadly diminished numbers, and was an extremely cautious and accurate recorder; his writings exhibit an absence of controversy, though in his private correspondence he was a very candid critic. We will conclude with a cutting from an appreciation written by our contributor Mr. A. H. Patterson:—"Mr. Southwell will not be remembered so much as an original observer and litterateur as a careful and painstaking compiler, and by the excellent work he has accomplished in simplifying and completing the work begun by others. Of his one published book, 'The Seals and Whales of the British Seas,' he was not at all proud, and, indeed, has expressed his dissatisfaction with it to me in strong terms. Yet his researches among the Finnipedia and Cetacea of our islands have been of great service in reducing from a chaotic state the nomenclature and classification to a well-arranged system, and his editing of Arctic whaling records and logs is appreciated all through the world of science. He was foremost to give credit where credit was due, and deeply resented literary and scientific cribbage."

NOTICES OF NEW BOOKS.

The Making of Species. By DOUGLAS DEWAR, B.A., &c., and FRANK FINN, B.A., &c. John Lane.

THIS book appears to have been written with two intentions: one to criticize much evolutionary theory, the other to give a popular abstract of many of those theories which to-day, more or less, occupy the biological outposts. The authors are dissatisfied with much of the dogma that has been built upon these theories, and in this protest, for the work is highly polemical, many naturalists will probably not be too greatly shocked; at the same time the pages would not have suffered in argument had they been written in a more subdued style.

As regards Darwinism the authors clearly point out that the dogma of the all-sufficiency of natural selection is not to be ascribed to Darwin, who "at no time believed that natural selection explained everything," and they further remark that it is Wallace who claims the all-sufficiency of natural selection, in which he is followed by Weismann and Poulton, and they "dub the school" which "holds this article of belief . . . the Wallaceian school." In connection with this subject, however, one statement is cryptic. We are told that the Darwinian theory "has the defect of the period in which it was enunciated. The eighteenth century was the age of cocksureness, the age in which all phenomena were thought to be capable of simple explanation." Is not this antedating the theory by a century? and is the mental affliction to which our authors refer quite a thing of the past?

The section devoted to mimicry is a piece of careful and judicious criticism, and one that will well repay the perusal of the extreme advocates of that theory. Instances of false mimicry where the mimicking species inhabit widely separated continents are not infrequent, and Messrs. Dewar and Finn give examples in both mammals and birds, to which many other instances could be added. They pertinently observe:—"We may perhaps call the cases which the theory of mimicry is unable to account for 'false mimicry,' but in so doing we must bear in mind the possibility that some at any rate of the examples of so-called mimicry may, on further investigation, prove to be nothing of the kind."

We cannot follow the discussion of most of the cognate theories on the subject, but readers will find the abstracts of many of them given in an easily understandable manner. But we are still only on the fringe of a demonstration; "at present our knowledge of the causes of variation and mutation is practically *nil.*" In reading books and papers on what may be called external or superficial evolution it is a marked feature that the genus *Homo* seems to be let severely alone; but why? The different colorations of mankind and the distinct racial cranial developments ought to be included in the postulate of "the all-sufficiency of natural selection," as well as the peculiarities of insects, as a rule, and of other animals less frequently. We neither venture to affirm nor deny the possibility of this demonstration, but it is necessary to advance the theories of mimicry and protective resemblance into anthropological studies before we have exhausted the argument or absolutely proved the thesis.

The Wild Beasts of the World. By FRANK FINN, B.A., F.Z.S., &c. T. C. & E. C. Black.

WITH part 17, recently published, this serial work is completed, and forms two handsome volumes. The publishers claim that it is "a very beautiful book to look at, a fascinating book to read, and a valuable book to possess." As a richly illustrated work, with Mr. Finn's carefully compiled text, these claims may be admitted, and as a popular introduction to a knowledge of "the larger and nobler types" of terrestrial mammals it is in advance of similar publications. The coloured illustrations may perhaps as a whole be described as too brilliant in hue, but the drawings on which they are founded are by Louis Sargent, C. E. Swan, and Winifred Austen. If it can scarcely be described as a treatise on zoology, it is certainly one of the best "nature books" that we have seen; while the text will bear comparison with that of our standard popular "Natural Histories."

EDITORIAL GLEANINGS.

South Africa is advancing outside the dreams of millionaires. In the 'Transvaal Weekly Illustrated,' just to hand, we have a report of Prof. Thomson's lecture on "What we Owe to Darwin," before a congested and crowded audience at Johannesburg, in the Assembly Hall of the Transvaal University College, and with the *Anglican Bishop of Pretoria as Chairman.* The following extracts are typical of the Address:—

"The evolution idea was known to Greek philosophers; it came from Aristotle to Hume and Kant; it linked Lucretius to Goethe. It was made more actual by pioneers of modern biology such as Buffon, Lamarck, Erasmus Darwin, and others, and became current intellectual coin when Charles Darwin, Alfred Russell Wallace, Herbert Spencer, Huxley, and Haeckel won the conviction of most thoughtful men. It showed how each stage of life was linked to the one before, back and back, until all was lost in the thick mists of life's beginnings. In dealing with the evidence he claimed that all facts known were evidences of evolution, and that just as the Whale had rows of teeth that never came through and beneath feet of blubber concealed a hind-leg, so man was a perfect collection of relics, like the buttons and tabs on his garments, which had long ceased to have any functional use, but had a highly interesting history. An instance of this survival was the word Leopard, the 'o' in which was no longer sounded, but which served to remind us that the ancients believed that animal to be a cross between the 'Leo' and the 'Pard.'

"Darwin was the liberator of human intelligence. The 'Origin of Species' had been called the Magna Charta of intellect. It freed the intellect from the tyranny of dogma, attacking realms hitherto considered inaccessible to science. It threw light, in a hopeful way, upon man's nature, it gave new light to literature, even to theology; and it could lead us in the future to an almost undreamt-of control of life. The evolution idea was now part of the intellectual inheritance of every man. It had given the world a new outlook. Older than

Aristotle, from being an *a priori* anticipation, it became a detailed interpretation, of which Darwin was chief interpreter. From a model interpretation—an explanation of the mode by which things came—it became a causal theory, the most convincing part of which would always be called Darwinism. We had to take into consideration, besides the personality of Darwin, the work of other pioneers, the development of thought, social changes, the ripening of public opinion. But granted that the man and the moment came together, we had still to remember that Darwin succeeded where others had failed, had put forward a more plausible theory of the process than others had been able to do; and that of his condescension he wrote so that all men could understand."

In the 'Avicultural Magazine,' published this month, Dr. A. G. Butler contributes an interesting article on "Morality in Birds." He thus concludes:—"Touching the question of *meum* and *tuum*, we all know that birds have no conscience; they rob one another whenever the chance offers, and believe to the full in the doctrine of the survival of the fittest. They do, however, sometimes seem to be compassionate towards young birds left orphans, for I have known a Robin to help to rear young Thrushes when a cat had killed her own young and one of the parent Thrushes had been shot; yet it is probable that this was only a way in which the arrested feeding-fever was working itself out, and no more creditable than is the love of female children for dolls. If, therefore, there is any moral sense in birds, it would seem to be limited to the female sex, and as a guard against pairing between parent and child. . . . . In the case of fanciers' birds—Canaries, poultry, Pigeons, and even Barbary Doves—I have little doubt that all moral sense is lacking, owing to man's constant supervision, high feeding, and other things which encourage an unnatural condition; all experiments, therefore, should be conducted with birds which retain their wild character and have not been long under man's care."

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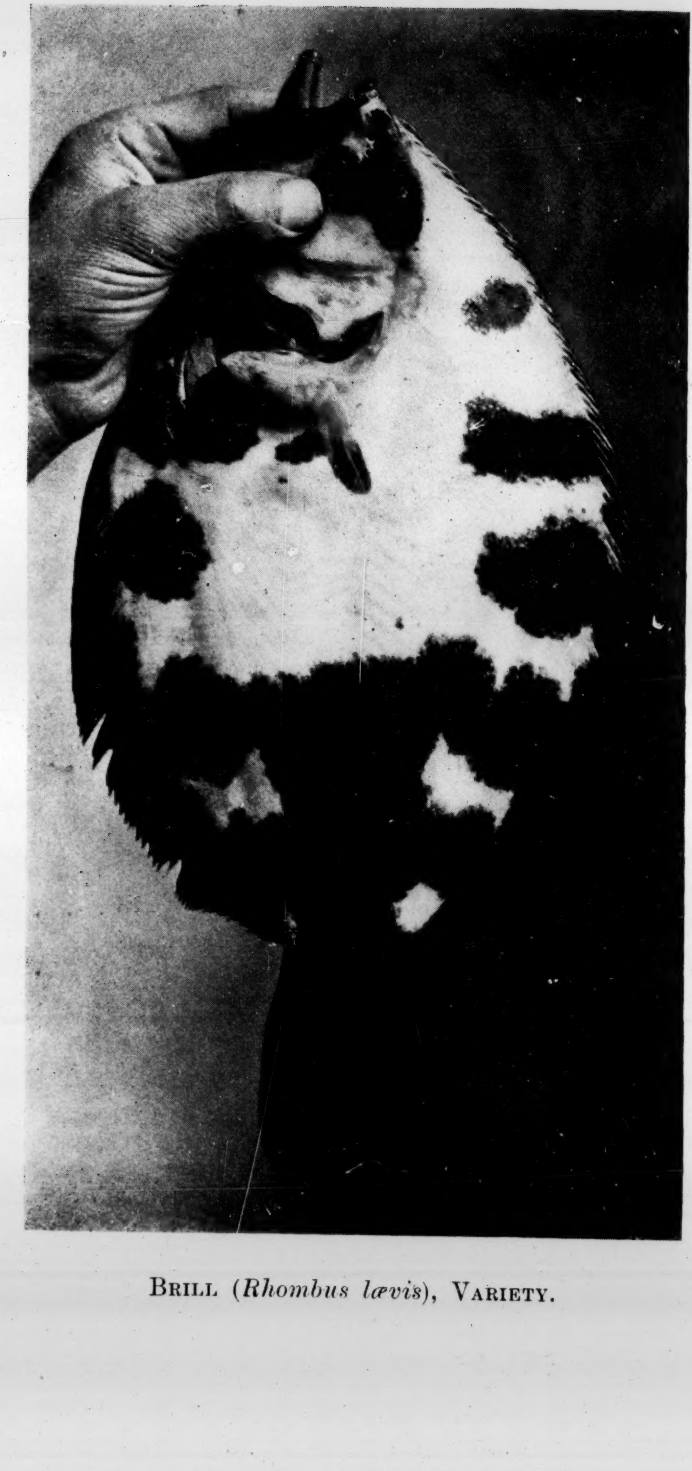

BRILL (*Rhombus lævis*), VARIETY.